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| 10/724,694      | 12/02/2003  | Minoru Miyaji        | 246194SU2           | 1977             |

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EXAMINER

RIELLEY, ELIZABETH A

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
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2879

DATE MAILED: 01/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/724,694

Applicant(s)

MIYAJI ET AL.

Examiner

Elizabeth A. Rielley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 October 2005.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,2 and 7-15 is/are rejected.  
7) ☒ Claim(s) 3-6 and 16 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 02 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/2/05.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

Amendment filed 10/26/05 has been entered and considered by the Examiner. Currently, claims 1-16 are pending in the instant application.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawasaki et al (US 5463276).

In regard to claim 12, Kawasaki et al ('276) teach a discharge light-emitting device comprising: a transparent first substrate (304; figure 11; column 9 line 42 to column 10 line 36); at least two first electrodes formed on said first substrate in parallel to each other and configured to form a first clearance between the at least two first electrodes (322; column 11 lines 1-9), the first clearance extending in a longitudinal direction of said first substrate (see figure 11; not numbered); a transparent second substrate (303); at least two second electrodes formed on said second substrate in parallel to each other and configured to form a second clearance between the at least second electrodes (330; column 11 lines 10-34), the second clearance extending in a longitudinal direction of said second substrate (not numbered; see figure 11); sidewalls (305) configured to form a discharge space with said first, and said second substrate opposite to said first substrate so that said at least two first electrodes and said at least two second electrodes are opposite to each other and the at least two second electrodes are inside said

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discharge space (not numbered; see figure 11); at least two first fluorescent layers formed on a discharge space said of said first substrate in parallel to each other so as to be opposite to said at least two first electrodes and configured to form a third clearance between the at least two first fluorescent layers (323), the third clearance extending in the longitudinal direction of said first substrate (see figure 11); and at least two second fluorescent layers formed on a discharge space side of said second substrate in parallel to each other so as to be opposite to said at least two second electrodes and configured to form a fourth clearance between the at least two second fluorescent layers (333), the fourth clearance extending in the longitudinal direction of the second substrate (not numbered; see figure 11), wherein said third clearance is shorter than said fourth clearance (see figure 18b; column 14 lines 33 to 56).

In regard to claim 13, Kawasaki et al ('276) teach the second substrate is configured as a glass plate to which an original to be read may be carried (column 11 lines 10-21).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al (US 5463276) in view of Lee (US 20030146699).

In regard to claim 1, Kawasaki et al ('276) teach a discharge light-emitting device comprising: a transparent first substrate (304; figure 11; column 9 line 42 to column 10 line 36); at least two first electrodes formed on said first substrate in parallel to each other and configured to form a first clearance between the at least two first electrodes (322; column 11 lines 1-9), the first clearance extending in a longitudinal direction of said first substrate (see figure 11; not numbered); a transparent second substrate (303); at least two second electrodes formed on said second substrate in parallel to each other and configured to form a second clearance between the at least second electrodes (330; column 11 lines 10-34), the second clearance extending in a longitudinal direction of said second substrate (not numbered; see figure 11); sidewalls (305) configured to form a discharge space with said first, and said second substrate opposite to said first substrate so that said at least two first electrodes and said at least two second electrodes are opposite to each other and the at least two second electrodes are inside said discharge space (not numbered; see figure 11); at least two first fluorescent layers formed on a discharge space side of said first substrate in parallel to each other so as to be opposite to said at least two first electrodes and configured to form a third clearance between the at least two first fluorescent layers (323), the third clearance extending in the longitudinal direction of said first substrate (see figure 11); and at least two second fluorescent layers formed on a discharge space side of said second substrate in parallel to each other so as to be opposite to said at least two second electrodes and configured to form a fourth clearance between the at least two second fluorescent layers (333), the fourth clearance extending in the longitudinal direction of the second substrate (not numbered; see figure 11). Kawasaki is silent regarding the limitation of wherein light emitted from said at least two of the first and second fluorescent layers on both sides of the third and fourth clearances is reflected from an original located on a side of said second substrate opposite to the discharge space side. Lee ('699) teaches a reflecting layer (28; paragraph 27) on the second substrate (25), the reflecting layer facing outside of the discharge area of a discharge light-emitting device in order to increase the luminosity of the light-emitting device. Hence, it would have been

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obvious at the time of the invention to one of ordinary skill in the art to combine the light-emitting device of Kawasaki with the reflecting layer of Lee. Motivation to combine would be to increase the luminosity of the light-emitting device. Although both Kawasaki and Lee do not explicitly state that the light emitted from the fluorescent layers is reflected through the central part extending in longitudinal direction of said substrate and reaches the opposite side of the discharge space of said first substrate, it would have been obvious at the time of the invention to one of ordinary skill in the art that by placing a reflecting layer behind the second substrate, the light emitted from the fluorescent layers would naturally be reflected back into the discharge space, due to the nature of transparent substrates and reflective substances.

In regard to claim 2, Kawasaki et al ('276) teach the second substrate is configured as a glass plate to which an original to be read may be carried (column 11 lines 10-21).

In regard to claim 7, Lee continues to teach that the first electrodes are formed on the first substrate opposite to the discharge space (28; paragraph 27; see figure 2). Motivation to combine would be to increase the luminosity of the light-emitting device.

In regard to claim 8, Kawasaki et al (276) teach the at least two first electrodes on the first substrate are formed on the discharge space side of the second substrate (see figure 11).

In regard to claim 9, Kawasaki et al ('276) teach the at least two second electrodes on the second substrate are formed on the discharge space side of the second substrate (see figure 11).

Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al (US 5463276) in view of Lee (US 20030146699) and in further view of Arimoto (US 6674061).

Kawasaki/Lee disclose all the limitations set forth, as described above, except the first and second electrodes on said first and second substrate extending in parallel are connected to each other at one end thereof in longitudinal direction, thereby forming a connection part that is connected to an outside high voltage power source. Arimoto ('061) teaches the first and second electrodes (24, 25; column 5 line 59 to column 6 line 45) on said first and second substrate (2, 3) extending in parallel are connected to each other at one end thereof in longitudinal direction (see figure 5), thereby forming a connection part that is connected to an outside high voltage power source (14, 15; column 4 lines 2-5) in order to improve the life-span of the light-emitting device. Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the light-emitting device of Kawasaki/Lee with the high voltage of Arimoto. Motivation to combine would be to improve the life-span of the light-emitting device.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawasaki et al (US 5463276) in view of Arimoto (US 6674061).

In regard to claim 14, Kawasaki et al ('276) teach a discharge light-emitting device comprising: a transparent first substrate (304; figure 11; column 9 line 42 to column 10 line 36); at least two first electrodes formed on said first substrate in parallel to each other and configured to form a first clearance between the at least two first electrodes (322; column 11 lines 1-9), the first clearance extending in a longitudinal direction of said first substrate (see figure 11; not numbered); a transparent second substrate (303); at least two second electrodes formed on said second substrate in parallel to each other and configured to form a second clearance between the at least second electrodes (330; column 11 lines 10-34), the second clearance extending in a longitudinal direction of said second substrate (not numbered; see figure 11); sidewalls (305) configured to form a discharge space with said first, and said second

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substrate opposite to said first substrate so that said at least two first electrodes and said at least two second electrodes are opposite to each other and the at least two second electrodes are inside said discharge space (not numbered; see figure 11); at least two first fluorescent layers formed on a discharge space said of said first substrate in parallel to each other so as to be opposite to said at least two first electrodes and configured to form a third clearance between the at least two first fluorescent layers (323), the third clearance extending in the longitudinal direction of said first substrate (see figure 11); and at least two second fluorescent layers formed on a discharge space side of said second substrate in parallel to each other so as to be opposite to said at least two second electrodes and configured to form a fourth clearance between the at least two second fluorescent layers (333), the fourth clearance extending in the longitudinal direction of the second substrate (not numbered; see figure 11). Kawasaki et al ('276) are silent regarding the limitations of a contact image sensor, a converging lens that is disposed on the opposite side of the discharge space in the central part extending in longitudinal direction of said first substrate, and converges light reflected from the original; and a sensor for detecting the light reflected from said lens; wherein light emitted from said fluorescent layers on both sides of the central part extending in longitudinal direction of said substrate is reflected at an original located on opposite side of the discharge space of said second substrate, and then the reflected light passes through the central part extending in the longitudinal direction of said substrate and comes to be converged into said lens disposed on the opposite side of the discharge space in said first substrate. Arimoto ('061) teach a contact image sensor (50; figure 4), a converging lens that is disposed on the opposite side of the discharge space in the central part extending in longitudinal direction of said first substrate, and converges light reflected from the original (54; see figure 4; column 5 line 49-column 6 line 41); and a sensor (53) for detecting the light reflected from said lens; wherein light emitted from said fluorescent layers on both sides of the central part extending in longitudinal direction of said substrate is reflected at an original located on opposite side of the discharge space of said second substrate, and then the reflected light passes through the central part



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extending in the longitudinal direction of said substrate and comes to be converged into said lens disposed on the opposite side of the discharge space in said first substrate, in order to improve the efficiency of the contact image sensor. Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the light-emitting device of Kawasaki with the contact image sensor of Arimoto. Motivation to combine would be to improve the efficiency of the contact image sensor.

In regard to claim 15, Kawasaki et al ('276) teach the second substrate is configured as a glass plate to which an original to be read may be carried (column 11 lines 10-21).

#### ***Allowable Subject Matter***

Claims 3-6 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

Applicant's arguments filed 10/26/05 have been fully considered but they are not persuasive. Kawasaki et al ('276) teach a discharge light emitting device with the appropriate clearances (see figures 11 and 18b).

*Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available

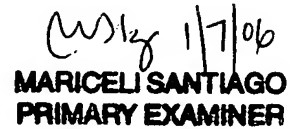
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*Elizabeth Rielley*

*Examiner*  
*Art Unit 2879*



**MARICELI SANTIAGO**  
**PRIMARY EXAMINER**